OS3-5 仮想パッチによるサポート切れOS（Windows 2003, XPなど）のセキュリティ・レベル維持について

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For security level maintenance of support out by the virtual patch OS (such as Windows 2003, XP)

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Security patches provided by Microsoft is sent as monthly, there are many trouble to measures of OS has expired of support than that. Security patches are also provided to the application as well as OS. These services are almost completed at the same time as the OS, then is no longer provided security patch. Therefore, we at once solve these worries, as if we introduce the method / system that is said to create an environment, such as if you applies the security patch “virtual patch”.

OS4-1 チュートリアル：生体、組織、細胞の酸素を測る技術

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A practical guide to measuring oxygen concentration in cell, tissue and whole body

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Oxygen availability in the cell defines physiology and pathophysiology of cellular functions. Although measurement of Po2 in arterial blood using oxygen electrode is already well-established, the measurement permits assessment of cellular oxygen only incompletely because the considerable gradient in oxygen concentration is present between arterial blood and intracellular space that varies according to the tissue blood flow, tissue vasculature geometry, and cellular oxygen demand. Therefore, we are prompted to directly measure the level of oxygen as it works in the cell. At present, however, not many techniques are available for accurate assessment of cellular oxygenation, particularly in vivo. In this session, actively working researchers in this field will introduce recent techniques for tissue oxygen measurement in vivo. I, the organizer, have asked the speakers to explicitly specify the following; parameter measured, spatial resolution, time resolution, resolution in oxygen concentration, perturbation caused from the measurement, and limitation of the measurement. We hope that the information provided here give a clue to optimize your oxygen measurement.

OS4-2 酸素電極法・リン光寿命法を用いた生体組織の酸素分圧計測

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In vivo measurement of oxygen partial pressure using polarographic electrode and phosphorescence quenching

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Polarographic oxygen electrodes have been used to measure partial pressure of oxygen (pO2) in living tissue. The electrode provides a reliable measure in a specific location based on an electrolysis reaction induced at the electrode tip made by a combination of platinum cathode and silver anode. When a fixed polarization voltage was applied, oxygen is reduced at the cathode surface and a current flows. Because the current is stoichiometrically related to an amount of oxygen reduced, it can be converted to a pO2 based on a calibration curve, determined with standard solutions. The electrode consumes oxygen, which can be minimized by downsizing the electrode tip. The miniaturizing electrode allows for a minimum invasion of tissue measured, and ideally provides a rapid pO2 recording. However, this technique limits to a single point measurement. A phosphorescence quenching method allows for pO2 imaging. According to a Stern-Volmer relationship, the pO2 can be determined by either phosphorescence intensity or lifetime. The lifetime is independent of tissue optical property and concentration of the dissolved phosphor. Thus, the lifetime imaging is preferably used for mapping tissue pO2.